DECLARATION OF YUICHIRO SHINDO
UNDER 37 CFR §1.132

I, Yuichiro Shindo, having been wanted in accordance with Section 1001 of Title 18 of the United States Code, declare to add additional Examples and an additional Comparative Example of the present invention.

(Additional Example 1-A)

The hafnium obtained as with Example 1 was subject to deoxidation at 1250°C for 5 hours with molten salt of Ca and $CaCl_2$. Reduction was realized where O: 30wtppm and C: <10wtppm, and other impurities were also reduced to 30wtppm.

Accordingly, it is possible to obtain a high purity hafnium ingot having a purity level of 4N (99.99wt%) excluding zirconium.

The sputtering target obtained from this ingot is also capable of maintaining high purity, and, by performing sputtering with this target, a uniform high purity hafnium thin film can be formed on a substrate.

(Additional Example 1-B)

The hafnium obtained as with Example 1 was subject to deoxidation at 1150°C for 10 hours with molten salt of Ca and $CaCl_2$. Reduction was realized where O: 40wtppm and C: <10wtppm, and other impurities were also reduced to 30wtppm.

Accordingly, it is possible to obtain a high purity hafnium ingot having a purity level of 4N (99.99wt%) excluding zirconium.

The sputtering target obtained from this ingot is also capable of maintaining high purity, and, by performing sputtering with this target, a uniform high purity hafnium thin film can be formed on a substrate.

(Additional Comparative Example 2)

The hafnium sponge (intermediate product) obtained as with Example 1 was washed with fluoride nitride to eliminate the impurities on the surface, and this was subsequently wrapped with a Zn foil to obtain a compact.

Subsequently, this compact was placed in an electron beam melting furnace and

subject to electron beam melting. The conditions of the electron beam melting were as follows.

Degree of vacuum:	2×10^{-4}Torr
Current:	1.25A
Casting rate:	20kg/hr
Power source unit:	4kwh/kg

Consequently, the impurity content of the ingot was O: 250wtppm, C: 40wtppm, S: 20wtppm, and P: 20wtppm. As indicated above, the impurity content was high, and it was not possible to obtain an ultrapure hafnium ingot.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like are punishable by fine and imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date: January 19, 2010

Signature:

Yuichiro Shindo

Yuichiro Shindo